HES880 DRIVE MODULES

Mobile drive solution
for working machine and marine applications

Dependaple heavy duty performance is essential to your operations. Our HES880 drives are designed with this in mind. They help you increase productivity, while reducing fuel consumption and emissions.

Rugged and reliable in hard conditions

The all-compatible drive
With its high vibration tolerance, the HES880 offers the rugged, reliable performance you demand. When used in inverter mode, it controls the torque and speed of the electric motor. When used in its generator mode, it can control the DC-link voltage in your electrical drivetrain. The DC/DC mode lets you use the drive with a battery or super capacitor.

Liquid cooling
Liquid cooling provides excellent efficiency in a compact enclosure. With a high input cooling temperature of up to 70 °C, the cooling system can be simplified and downsized, saving you costs and reducing maintenance needs.

Accurate, precise control without an encoder
With ABB's proven direct torque control (DTC) also encorderless control is possible with the motor. This also reduces your maintenance risk and costs. With DTC, the drive is designed to control induction, permanent magnet and synchronous reluctance motors. DTC also extends the same control benefits to generators.

Technical data

Ratings	
Current range	Size H3i: 233 A continuous and 350 A peak[1)] Size H6i: 400 A continuous and 600 A peak[1)] Size H9i: 600 A continuous and 900 A peak[1)]
Supply voltage	3-phase, 230 to 500 V ±10%
Supply frequency	48 to 63 Hz
Output frequency	0 to 1,000 Hz
DC voltage	320 to 850 V
Controls	
Motor control	Direct torque control (DTC) and scalar control
Line converter control	DC voltage, power and power factor
DC-DC converter control	DC voltage, power and current
Connections	
Motor temperature	Isolated Pt100, NTC, KTY84 and PTC input
Motor speed	Resolver and HTL-encoder
Inputs and outputs	Two analog inputs, three digital inputs, two digital outputs
Control bus	CANOpen, CAN SAE J1939
Options	
External filters	Chokes for DC/DC converter and LCL-filter for grid connection Internal brake chopper
Converter options	Brake chopper, encoded power connection and HVIL
PC tools	Drive composer
Environmental limits	
Degree of protection	IP67
Coolant temperature	-40 to +70 °C (-40 to +160 °F)
Ambient temperature	-40 to +85 °C (-40 to +185 °F)
Altitude	Max. 4000 m
Product compliance	
Directives and standards	Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC, EMC Directive 2004/108/EC, EMC (EN 13309, ISO 13766, EN/IEC 61800-3 C3, IEC 61326-3-1, IEC 60533), RoHS, Quality assurance system ISO 9001
Vibration	IEC 60068-2, 4g constant and 30g shocks
Safety	Safe torque off (STO), SIL 3
Certifications	CE, cURus
Marine type approvals	ABS[2)], BV[2)], DNV-GL, Lloyd's Register[2)]

[1)] If coolant below 45 °C, continuous current can be equal to peak current
[2)] Approvals pending

Suitable for many applications like:

- Applications with strongly cyclic loads
- Traction motors
- Generators
- Energy storages
- Propulsion
- Cranes
- Winches
- Auxiliary motors
- Grid connections
- Tidal and wave power generation
- Fuel cell

Programmable

You can easily customize the drive with ABB Control Builder Plus to meet your unique application challenges. Application programming is based on IEC 61131-3 standard.

Versatile hardware

HES880 has three different firmwares. One hardware can be configured to operate in three modes.

- Inverter for traction motor and generator up to 510 kW continuous and up to 760 kW peak electrical power (500 V and cosφ 0.98)
- Bi-directional line converter for grid connectivity
- DC/DC converter for super capacitor or battery interface, up to 620 kW

For more information please contact your local ABB representative or visit:

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abb.com/drivespartners

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